

## AMENDMENTS TO THE CLAIMS

1. (Currently amended) A substrate processing apparatus for polishing a substrate, said substrate processing apparatus comprising:

a loading/unloading stage on which a cassette having a plurality of substrates is to be placed;

a polishing unit for polishing a substrate, said polishing unit including

(i) an edge-portion polisher for pressing a first polishing tape against an edge portion of a the substrate and making a causing relative movement between the first polishing tape and the substrate to polish the edge portion of the substrate; and

(ii) a bevel-portion polisher for pressing a second polishing tape against a bevel portion of the substrate and making a causing relative movement between the second polishing tape and the substrate to polish the bevel portion of the substrate;.

(iii) a notch polisher for pressing a third polishing tape against a notch formed in the substrate and causing relative movement between the third polishing tape and the substrate to polish the notch of the substrate, and

(iv) a cleaning device for conducting a primary cleaning of a polished substrate;

a transfer robot for transferring a substrate between a cassette, when on said loading/unloading stage, and said polishing unit; and

an air supply system for supplying air so that pressure of said loading/unloading stage is greater than pressure of said polishing unit.

***Claims 2-4 (Cancelled)***

5. (Currently amended)      ~~A~~ The substrate processing apparatus according to claim 1, wherein said edge-portion polisher includes two clamp members, and said edge portion polisher is structured to polish the edge-portion of the substrate by clamping upper and lower surfaces of the edge portion of the substrate through the first polishing tape by ~~a pair of~~ said two clamp members while the substrate is held and rotated by a substrate holding table.

6. (Currently amended)      ~~A~~ The substrate processing apparatus according to claim 5, wherein said two clamp members are movable in a radial direction of the substrate, when held by the substrate holding table, for adjusting a radial position of the edge portion to be polished by said edge-portion polisher.

7. (Currently amended)      ~~A~~ The substrate processing apparatus according to claim 5, wherein said edge-portion polisher further comprises includes a roller guide for guiding the first polishing tape radially outwardly of the substrate, when held by the substrate holding table, to be polished between said two clamp members, and for guiding the first polishing tape from one of said two clamp members toward the other of said two clamp members.

8. (Currently amended)      ~~A~~ The substrate processing apparatus according to claim 5, wherein said edge-portion polisher further comprises includes a mechanism for opening and closing

said two clamp members, with said two clamp members and said mechanism being vertically movable.

9. (Currently amended)      ~~A~~ The substrate processing apparatus according to claim 1, wherein said bevel-portion polisher includes a polishing head having a resilient member, and said bevel-portion polisher is structured to polish the bevel-portion bevel portion of the substrate by pressing the second polishing tape against the bevel-portion bevel portion of the substrate with a said polishing head having a resilient member while the substrate is held and rotated by a substrate holding table.

10. (Currently amended)      ~~A~~ The substrate processing apparatus according to claim 9, wherein said polishing head is movable in a radial direction of the substrate when held by the substrate holding table.

11. (Currently amended)      ~~A~~ The substrate processing apparatus according to claim 3\_1, wherein said notch polisher includes a resilient member, and said notch polisher is structured to polish the notch of the substrate by pressing the third polishing tape against the notch in the substrate with a said resilient member and moving the third polishing tape while the substrate is held by a substrate holding table.

12. (Currently amended) ~~A~~ The substrate processing apparatus according to claim 11, wherein said resilient member is vertically movable so that the third polishing tape is to be pressed against an upper edge, a radially outward edge, and a lower edge of the notch, selectively.

13. (Currently amended) ~~A~~ The substrate processing apparatus according to claim ~~2~~ 1, further comprising:

a cleaning unit for cleaning and drying the substrate after the substrate has been polished by said polishing unit and removed from said polishing unit.

14. (Currently amended) ~~A~~ The substrate processing apparatus according to claim 1, further comprising:

an image sensor for imaging a region, being polished, of the substrate while the substrate is being polished; and

a controller for processing an image obtained by said image sensor to determine a polishing state of the region being polished.

15. (Currently amended) ~~A~~ The substrate processing apparatus according to claim 14, wherein said controller detects is for detecting a polishing end point from the polishing state of the region being polished as determined by said controller.

16. (Currently amended)    ~~A~~ The substrate processing apparatus according to claim 1,  
further comprising:

    a photosensor for applying light to a region, being polished, of the substrate and detecting  
light reflected by the region being polished, while the substrate is being polished; and  
    a controller for analyzing scattered light detected by said photosensor to determine a  
polishing state of the region being polished.

17. (Currently amended)    ~~A~~ The substrate processing apparatus according to claim 16,  
wherein said controller detects is for detecting a polishing end point from the polishing state of the  
region being polished as determined by said controller.

18. (Currently amended)    ~~A~~ The substrate processing apparatus according to claim 1,  
further comprising:

    a controller for detecting a torque value to rotate the substrate, on a basis of a signal from a  
motor for rotating the substrate, while the substrate is being polished, and analyzing a change in the  
torque value.

19. (Currently amended)    ~~A~~ The substrate processing apparatus according to claim 18,  
wherein said controller detects is for detecting a polishing end point from the change in the torque  
value as analyzed by said controller.

20. (Currently amended)    ~~A~~ The substrate processing apparatus according to claim 1,  
further comprising:

a controller for detecting a torque value of a rotational shaft of a substrate holding table for holding and rotating the substrate while the substrate is being polished, and analyzing a change in the torque value.

21. (Currently amended)    ~~A~~ The substrate processing apparatus according to claim 20,  
wherein said controller detects is for detecting a polishing end point from the change in the torque value as analyzed by said controller.

22. (Currently amended)    ~~A~~ The substrate processing apparatus according to claim 1,  
further comprising:

a controller for measuring a tension applied to the one of the first, second and third polishing tapes which is held in sliding contact with the a region, being polished, of the substrate while the substrate is being polished, to determine a polishing state of the region being polished.

23. (Currently amended)    ~~A~~ The substrate processing apparatus according to claim 22,  
further comprising:

a controller for measuring a tension applied to a portion of a member for pressing the one of the first, second and third polishing tapes against the a region, being polished, of the substrate while the substrate is being polished, to determine a polishing state of the region being polished.

***Claims 24-51 (Cancelled)***

52. (New) A method of polishing a substrate, said method comprising:

placing a cassette having a plurality of substrates on a loading/unloading stage;

transferring a substrate between ~~the~~ said cassette on the loading/unloading stage and a polishing unit;

pressing a first polishing tape against an edge portion of ~~a~~ said substrate and ~~making~~ a ~~causing~~ relative movement between ~~the~~ said first polishing tape and ~~the~~ said substrate to polish ~~the~~ said edge portion of ~~the~~ said substrate in ~~the~~ said polishing unit;

pressing a second polishing tape against a bevel portion of ~~the~~ said substrate and ~~making~~ a ~~causing~~ relative movement between ~~the~~ said second polishing tape and ~~the~~ said substrate to polish ~~the~~ said bevel portion of ~~the~~ said substrate in ~~the~~ said polishing unit;

pressing a third polishing tape against a notch formed in ~~the~~ said substrate and ~~making~~ a ~~causing~~ relative movement between ~~the~~ said third polishing tape and ~~the~~ said substrate to polish ~~the~~ said notch of ~~the~~ said substrate in the polishing unit;

conducting a primary cleaning of ~~a polished~~ said substrate in the polishing unit after said edge portion, bevel portion and notch of said substrate have been polished; and

supplying air so that pressure of ~~the~~ said loading/unloading stage is larger than pressure of ~~the~~ said polishing unit.